

## Phase Change Lab

### Background:

**Question:** How does time relate to the change in temperature of  $\text{H}_2\text{O}$  as it changes phases from ice to water to gas?

### Hypothesis:

**Materials:** hot plate, thermometer, 250 ml beaker, stirring rod, tongs, ice

### Procedure:

1. Make a data table with two columns; one for time (0 to 29min.) the other for temperature ( $^{\circ}\text{C}$ )
2. Fill the beaker half full with ice and add water to cover the ice.
3. Put the thermometer in the beaker and wait for the temperature to stabilize.
4. Record temperature at time = 0 minutes.
5. Put the beaker on the hot plate. Measure the temperature every minute.
6. Record temperature every minute. Make a note of the time at which the ice first melts and at the time when it first boils (Record).
7. Once the water has started to boil, record the temperature for 5 more minutes.
8. Using your tongs, take the beaker off the hot plate and put it on a counter to cool, away from the edge and other students.
9. On your own graph paper, graph your results using MV = time (min.) and RV = temp. ( $^{\circ}\text{C}$ ). Connect data points to analyze what happened when the ice melted and the water boiled. This is not a best-fit line.

### Conclusion:

1. At what temperature did the water melt? What temperature did it boil?
2. When did the temperature change? When did it stay the same?
3. What can you conclude about the temperature during a phase change?

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4. At what temperature did the water melt? What temperature did it boil?
5. When did the temperature change? When did it stay the same?
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